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# Study of the Relationship between Credit Diversification Strategy and Banks' Credit Risk and Return: Evidence from Tehran Stock Exchange (TSE)

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## Abstract

The effect of banks' credit portfolio diversification on return on asset, return on equity and credit risk is investigated in this study. The sample is comprised of seven banks listed in Tehran Stock Exchange (TSE) whose data has been accessible between the years 2009 and 2014. According to the type of data and analysis methods, panel data multivariate regression method was used in this study. Results show that there is a significant relationship between credit portfolio diversification and risk; furthermore, it is the size that influences return on equity (ROE) and return on asset (ROA) of banks and in fact, there is no statistically significant relationship between use of diversification strategy in banks' credit portfolio and their ROA and ROE.

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## 1. Introduction

In the real world, we witness two types of approach and strategy in banks. We know these two approaches as diversification and concentration strategies. On the one hand, in many countries laws limit the bank exposure to a single borrower (Basel, 1991). On the other hand, some banks decide to get involved in the sectors at which they are specialized and in which they feel a competitive advantage (Chen, Wei, Zhang & Shi, 2013). The 2008 global financial crisis took place partly due to excessive exposure to the risk of real estate industry, which is closely related

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to macroeconomics (Demyanyk & Van Hemert, 2011). This crisis which was brought about due to the concentration of credit portfolio greatly influenced the entire U.S. banking industry. It was afterward that the strategy of concentration vs. diversification changed into one of the most important issues raised on the issue of economic stability.

Whether banks should diversify their credit portfolio or focus on firms with whose business they are familiar, is a question that many researchers have focused on. However, no consensus has been so far achieved on the answer to this question since the findings of different countries have some differences with one another and the obtained evidence support both views. On the one hand, the traditional banking theory suggests that the banks should diversify their credit portfolio in order to reduce the credit risk; this suggestion is also according to the portfolio theory (Markowitz, 1959). Based on the theory of asymmetric information, diversification reduces the costs of financial intermediation (Diamond, 1984). In practice, Basel Committee on Banking Supervision (1991) has reported that many banking crises in the past three decades have occurred as a result of concentration, meaning that risk is highly related to diversification.

On the other hand, corporate finance theory says that if firms focus their activities in special sectors where they are specialized or familiar, they can make use of the additional benefits of reduced costs (Acharya, Hasan, & Saunders, 2006). Furthermore, the strategy of diversification is less attractive as it leads to the creation of competition (Winton, 1999). The empirical evidence supporting this view can be found in Italy's banking sector, Germany and Brazil's banking sectors and small European banks ((Tabak, Fazio, & Cajueiro, 2011); (Hayden, Porath, & Westernhagen, 2007)).

Diversification in the bank is done with the goal of reduction of volatility of the bank operations through reduction of concentration of sources (deposits), costs (credits) and the proceeds from funds (Berger & Young, 2001). By creating diversification in their deposits, banks intend to reduce exposure to the risk of liquidity. The bank is exposed to the risk of liquidity when its borrowing power is low or costly and also when customers' unanticipated withdrawals or acceptable loan applications increase (Rose & Hudgins, 2010). Diversification in deposits is obtained by reduction of deposit absorption ratio from one special source (individual, business or general sector) at the local or international level, direction of customers' deposits to certain accounts (visual, savings and long-term) or publication of warrant on those deposits. The goal of these techniques is improvement of the efficiency of bank borrowing and eventually reduction of weighted average of capital cost.

The goal of credit portfolio diversification activities is reduction of risk of borrowers' non-fulfillment of their obligations. This is done through allocation of the proceeds of the deposit and non-deposit credits to different groups of customers in new geographical sectors or regions or through introduction of new types of credits (Jahn, Memmel, & Pflingsten, 2013). Through specialization of credit portfolio, credit risk can be reduced as well. With the reduction of the diversification ratio of credit types or diversification ratio of customers whose qualification for credit is approved, specialization can be achieved. Thus, the bank's power and experience for monitoring of dubious credit requests increases (Alshomaly, 2014).

With regard to the issues raised, present study attempted to investigate the relationship between the use of diversification strategy in credit portfolio, and ROA and ROE of the banks listed in TSE.

## **2. Theoretical Principles and Research Background**

Over the last three decades, most banks all over the world have become diversified in terms of activity or geographical presence. In fact, faced with increased competition by other financial institutions and world markets or improvement of risk-adjusted performance, banks have turned to diversification. Over the recent years, many studies have been conducted in the field of benefit and cost of use of diversification and its impact on the performance of banks. On the other hand, another important issue that has been considered by scholars in the recent years is whether selection of diversification can decrease or increase risk. Subsequently, some domestic and foreign studies conducted in this field will be investigated.

Jahn et al. (2013), in a study entitled "Bank's concentration versus diversification in the loan portfolio: new evidence from Germany", investigated the effect of credit portfolio concentration on credit risk. They divided the short-term and long-term credits of the years 2003 to 2011 of German banks to 23 different industries. The results showed that the banks that are specialized in lending to a special industry are faced with less credit risk than the

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